Lead Production in Virginia During The Seventeenth and Eighteenth Centuries

By Arthur Hecht

The earliest discovery of lead deposits in Virginia occurred in 1621 near Jamestown.[1] John Berkeley, a prominent and respected settler, reported that a superintendent of an iron works on Falling Creek found a vein of lead ore. The discovery was a local secret in order to keep the English company ignorant but the lead was worked into bullets and distributed to neighbors who used them mainly for hunting. The location of that first lead deposit was lost after a general massacre of the colonists by Indians. Thereafter, the importance of lead shifted from hunting to defense purposes, and ore from Great Britain was regularly imported. In 1624 John Harvey (a member of the mission sent from England to survey the colonial conditions of the Virginia Company in connection with the removal of the charter) reported that of the 1,200 persons in Virginia, 700 were able men qualified to fight Indians. The report included the notation that there was sufficient lead for small shot, but inadequate powder.[2]

In 1644, after another bloody massacre by Indians, the need of the colonists for lead shot became extremely desperate. The "Governor Councell and Burgesses" of the General Assembly of Virginia ordered "that all Lead whatsoever upon houses, Lead Weights or other Lead in whose custodye or possession soever it be found shall bee taken awaye by the next Inhabiting Leifts, where it shall bee soe found and imployed in the publique service and that the proprietor thereof shall receive satisfaccon for the small & all reasonable damages at the General Charge. Lead upon glasse windowes only excepted."[3]

Between 1712 and 1715 Colonel William Boyd, upon information given him by an Indian, found several pieces of lead upon the surface of ground which he owned. The trees in the vicinity were immediately marked so that digging of ore could be made at a later time. However, there is no information about any further development here.

The existence of lead ore was known to Sir William Gooch, Governor of Virginia. On June 20, 1749, when he replied to queries from the Lords of Trade, he stated that there were many signs of

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[1] Harrison Fagan, *American Economic Progress*, 92.
[2] William S. Powell, "Aftermath of the Massacre," *The Virginia Magazine of History and Biography*, Vol. LXVI, 65.
[3] "Acts, Orders and Resolutions," *Ibid.*, Vol. XXIII, 236-237.

lead "in many places near the Great mountains, but for want of persons skilled in the searches & monied men to carry them on, in all Probability they will remain in the same State many years."[4]

During 1754 some lead was occasionally dug on the New River at Wytheville across from the mouth of Cripple Creek. Two years later, Colonel John Chiswell, who built the first frame house west of the Alleghenies at the mouth of Mill Creek, discovered lead deposits along the New or Kanawha River. In 1758 Chiswell was joined in his mining development venture by Colonel William Byrd III, Governor Francis Fauquier, and John Robinson.[5] They planned to develop a thousand-acre tract on which the ore had been found. Because of their political positions, the four partners obtained the right to survey the tract as waste and unappropriated land. They were also in the financial position to buy off for £2,000[6] the prior claims of Thomas Walker and the Loyal Company in the same areas. Chiswell was sent to England with samples of the lead ore which appeared to be rich in silver. The assays were good. He brought back to Virginia both experienced miners and equipment, and the syndicate started to develop the mines. Because of his experience with iron mining,[7] Chiswell managed the lead mines and at the same time continued to serve as a colonel of a local militia. In 1763 he was paid £110.6.4 by the Virginia Assembly for his military duties and for supplying lead and provisions. Shortly after Chiswell's death in 1766, Fauquier lost interest in the mines and left the other partners. Robinson volunteered to furnish more than his share of the agreed capital. Upon the latter's death, Edmund Pendleton, one of the two administrators of the dwindling Robinson estate, agreed to continue the mining operations but refused to use any estate money for further development. By 1768 Byrd was the only surviving partner, and Pendleton sold him the thirty-six slave miners on the property for £2,010.

The ore from the Chiswell mines produced on an average, sixty per cent of lead. Occasionally, the lead ore was mixed with ground or imbedded in rock and required blasting. The furnace for reducing the ore in Wythe County was located one mile away on the other side of the New River as well as a good pounding mill. After the ore was reduced at the furnace, it was hauled 130 miles

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[4] "Virginia Under Governor Gooch," *Ibid.*, Vol. III, 118.

[5] For many years Robinson was probably the most influential man in Virginia. He was speaker of the House of Burgesses and Treasurer of Virginia from 1738 to 1765. At the time of his death in 1766 the value of his interest in the lead mining lands and the slaves who worked the mines was about £ 8,000. "Notes and Queries," *Ibid.*, XVII, 214-215.

[6] David J. Mays, *Edmund Pendleton*, Vol. I, 203.

[7] John Chiswell was the son of Charles Chiswell of Hanover County who was extensively engaged in iron works. Colonel William Byrd visited the elder Chiswell in 1732, seeking to understand the mysteries of the business. When his father died in 1737, John Chiswell took over the iron works. He was a member of the House of Burgesses, proprietor of the Raleigh Tavern in Williamsburg, son-in-law to Colonel William Randolph, and fellow in-law of John Robinson. He was a member of the House of Burgesses, keeper of Confederate Court House and then committed suicide. Thomas P. Abernethy, Western Lands and the American Revolution, 73; Virginia Council Journals, 1726-1753, The Virginia Magazine of History and Biography, Vol. XXXII, 34; and "Notes from Colonial Virginia Newspapers," *Ibid.*, Vol. XVI, 286.

over a good road through the Peaks of Otter to Lynch's ferry or to Winston's on the James River, and thence on water nearly 130 miles to Westham, six miles above Richmond. (A short canal, however, could have handled the expensive transportation of the ore more easily.)

In 1764 Adam Rader leased from Abraham Hite a lead mine in Augusta County (now Rockingham County). The mine was located near Timberville. Old county records show that the mine was operated during 1765, and there was a neighborhood tradition that it was worked during the Revolution as one of the sources of lead supply for the armies.[8]

There is also a letter of March 20, 1777, of the Governor of Virginia giving instructions to erect lead mines at Fredericksburg. It ordered in part that "Mr. Beverley [of the Fredericksburg Iron Works] be directed to prepare in the most expeditious manner the proper Clay for erecting the necessary works at the Lead Mines, and have the same conveyed there as soon as possible."[9]

For the first three quarters of the eighteenth century the Virginians had little time or need to develop their manufactures.[10] Those having money were essentially planters who regarded commercial and manufacturing pursuits as less respectable than those of agriculture. The climate and the fertility of the soil, the cheapness and abundance of the land (enabling many to acquire estates almost manorial in extent, all concurred with the native tastes of the inhabitants in fostering such a sentiment. To the Virginians, diversification of the economy meant greater development of sericulture; fishing; lumbering; growing of tobacco, indigo, flax, and hemp; the breeding of sheep; and the export of more iron to Great Britain.

The settlers of different colonies, on the other hand, were aware of the importance of iron, tin, and antimony. They were also very aware of the importance of lead: they knew the mariner used it as a plummet to gauge the depth of water through which his vessel sailed; the fisherman used it to sink his bait to the levels where the fish habitually lived; the pioneer moulded it into bullets for his rifle; the builder used it to plumb his walls, to shape his conduits, to frame light-panes, to water-tighten roof joints, or to cover entire structures; and the type founder employed it in mixing his alloy, as did the pewterer for fashioning plates, mugs, and candlesticks.

Some statistics exist relating to manufactures in Virginia, particularly that of lead mining in the upper district of the James

[8] "Notes and Queries," *Ibid.*, Vol. XXXIV, 277.

[9] Oscar H. Darter, *Colonial Fredericksburg and Neighborhood in Prospective*, 202.

[10] During the middle of the eighteenth century the General Assembly of the Virginia colony became alarmed by the declining economy and established a committee in 1759 for the purpose of encouraging productive diversification. Nineteen prominent political leaders were urged to raise and administer a bounty fund to increase "all such persons as they shall judge may give them any useful insight or intelligence of any art or manufacture." In 1766 the Premium Society of London joined the colonial legislative body in encouraging the colony to diversify itself. Robert L. Hilldrup, "A Campaign to Promote the Prosperity of Colonial Virginia," *Virginia Magazine of History and Biography*, Vol. LXVII, 410.

River. Production for October 25, 1764-October 5, 1765, was ten "tuns" and 2,702 bars of lead, and for October 25, 1765-October 25, 1766, was seven "tuns" and 3,870 bars of lead.[11] This quantity of lead was considered quite small, and the increasing need of it by the Virginians and the other British North American colonists aided the British Parliament in deciding to include lead among the dutiable articles on the Townshend tariff schedule of 1767.

This revenue act and particularly the retaliatory action by the British Parliament against Boston after the Boston Tea Party shocked and infuriated the colonists. Each of the colonies passed resolutions in 1775 condemning the British and sought methods to preserve the rights and liberties of America. Declarations of independence sprung up everywhere. The freemen of Fincastle County, Virginia, assembled at the Chiswell lead mines on January 20, 1775, and drew up the Fincastle Declaration of Independence.[12] Boycott of imports from Great Britain, however, exempted lead, along with salt, powder, saltpeter, nails, paper, cloths, and Negroes.[13] The serious shortage of lead stirred the provincial leaders in North America to extraordinary activity.[14] On May 3, 1775, the Committee of the County of Amelia, Virginia, resolved that one pound of lead be donated by every member of the Committee and from each tithable person in that county. About 3,200 pounds of lead were thereby collected.[15]

On July 31, 1775, the Continental Congress appointed a committee "to enquire in all colonies after virgin lead, leaden ore, and the best methods of collecting, smelting and refining it, ..."[16] The several colonies were subsequently prodded by their committees of safety with bounties to locate any lead deposits within their boundaries.[17] In Virginia the Convention during August of 1775 passed an ordinance to encourage the manufacture of lead. Also in 1775, Edmund Pendleton began to pay more attention to the Chiswell mines trying desperately to meet the needs of his own troops and those to the northward. The feverish activity at the mines, of course, helped substantially to build up the profits for the Robinson estate. Other lead deposits were found and mines developed near Fincastle and in Botetourt and Montgomery Counties.

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[11] "Notes and Queries," *Ibid.*, Vol. I, 98-99.
[12] Robert B. Bean, *The Peopling of Virginia*, 35.
[13] Culpepper County Resolutions of July 7, 1774. *American Archives*, Fourth Series, Vol. I, 523.
[14] In Pennsylvania the provincial congress took steps to procure from its inhabitants fishing nets, spouts, window weights, clock weights, and ornaments of houses to be melted down and used as bullets. A liberal price of six pence per pound was allowed to those persons who had contributed the lead objects.
[15] *American Archives*, Fourth Series, Vol. I, 477.
[16] *Journals of the Continental Congress*, Vol. IV, 185.
On November 20, 1775, the Secret Committee of the Continental Congress was empowered to contract for the importation of 1,000 tons of lead. *Ibid.*, Vol. III, 361.
During October of 1775, it was estimated that an inventory of ordnance and stores necessary for an army of 20,000 men required the following quantities: 15 tons for musketry and 3 tons of sheet. *American Archives*, *Fourth Series*, Vol. III, 1165.
[17] On December 23, 1775, a committee of the Continental Congress stated that 300 tons of lead were needed for a continental army. The cost of this was £ 18 per ton or £ 5,000. *Ibid.*, Vol. IV, 447.

An act of 1776 authorized the Governor of Virginia to operate temporarily certain lead mines on New River in Montgomery County belonging to William Byrd on the estates of John Robinson and John Chiswell, or to contract with the owners to operate such mines on the assurance that they would deliver to the colony of Virginia 100 tons of lead annually at £33 6s. 3d per ton. In 1777, the House of Burgesses passed Bill 18 relating to supplying lead to the public which contained the following details on the operation of lead mines:

> Be it enacted by the General Assembly that the Governor, with advice of the Council from time to time may hire or purchase, so many laborers [exempt from militia duties] to work in the lead mines in the county of Montgomery, as may be beneficially employed therein, for the use of the public, and put them, with the others already there, under direction of a manager. Of the lead produced from the said mines so much as may be spared, without danger of detriment to the commonwealth, shall be disposed of to the United States of America or any of them, and what they want not may be sold to others. A reasonable annual rent shall be paid to the proprietors of the land in which the mines are opened, to be adjusted between the said proprietors and the Governor, with advice of the Council. But the said mines, if the proprietors will undertake, at their own charges, to work them, and engage to deliver one hundred tons of lead, every year, to the use of the public, at the price of [?] by the ton, and give satisfactory assurance that the contract shall be resumed so long as that engagement shall be punctually observed and fulfilled. All expences incurred in the execution of this act shall be defrayed in like manner as other public debts and accounts thereof, as well as of the disposition of the lead, shall be orderly kept, and laid before the General Assembly, whenever it shall be required.[18]

On December 13, 1775, the Virginia Convention ordered the use of as many captive slaves thought necessary for working the lead mines in Fincastle.[19] As mentioned previously, slaves were used as mining laborers and had been so used since the days of the Chiswell mines. James Callaway directed the lead mines until December 5, 1777, when he was replaced as manager by Charles Lynch. The latter was urged by the Virginia Convention to use slaves, who were prisoners in the public jail, for working the lead mines.[20] Also, Negroes condemned to be transported to the West Indies, and who could not be sent because of the British blockade, were marched westward to speed up production in the lead mines.[21]

In the early part of 1776 there was a desperate call for lead from Colonel Nicholas Long of North Carolina. The British were expected to attack there and the Tory men in the area were becoming dangerously out of hand. On February 17, Edmund Pendleton

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[18] Julian P. Boyd, (Editor), *The Papers of Thomas Jefferson*, Vol. II, 388.
[19] *American Archives, Fourth Series*, Vol. IV, 84.
[20] *Ibid.*, Vol. VI, 1526.
On May 28, 1778, the Virginia Convention ordered, "That Charles, a Negro slave, belonging to Robert Brent, and Kitt, a Negro man slave, the property of George Brent, and condemned by the judgment of Stafford County Court for felony, and also four Negro slaves belonging to Thomas Paramore and John Bowdoin, condemned by the judgment of the County Court of Northampton for felony, be reprieved and sent to the Lead-Mines in the County of Fincastle, to be employed in working the same on account of the publick." *Ibid.*, 1548.
[21] *Southern Literary Messenger*, Vol. XXVII, 85-86.

replied to Long's urgent request. ". . . Of lead we have no large quantity here, and besides, apprehend it would retard your messengers return unnecessarily to send your proportionate quantity of that, we therefore only send 500 lbs. for immediate use, not doubting but every house almost will afford assistance in that article."[22] During May of 1776, the Virginia Convention ordered the procurement of bar lead from the Chiswell mines for the militia of Botetourt County. That frontier area expected trouble from Indians during the coming summer months. The nearby Indians had been to Detroit where they had received presents from the British commandant. Colonel William Russell, already on the Virginia frontier and fully cognizant of the importance of the mines, had ordered Lieutenant Robert Adams and thirty men to the mines.

By August of the same year, traders who escaped from the Indian towns, reported that the Indians had increased the size of their war parties to 700. A captain and a company of Bedford militia were called to Fort Chiswell[23] to guard the lead mines. They relieved the Fincastle militia who were reassigned to Holston. Some of the 700 Cherokees advanced against the Watauga and Holston settlements with the purpose of destroying everything as far as New River, but the militias at Holston on both sides of the Virginia line (under the command of Captain Thompson) defeated the Indians in a hard-fought action at Long Island of Holston (Kingsport, Tennessee).[24] Cornelius Harnett, President of the Convention of North Carolina, reported that when the Cherokee Indians attacked the North Carolina frontier areas, they also captured many white men in Virginia who were "well acquainted with the importance of a lead mine."[25]

It was only natural that the Virginia militias obtained all the lead that they needed for the defenses of their province. Although the exact amount of lead produced in Virginia during the Revolutionary period is not known, the Continental Congress was aware that Virginia had a "quantity of lead for use of the Continent at the lead mines in Virginia."[26] The following references to the transportation of lead by wagon or cart are shown among the payments to persons involved with Virginia militias during the Revolution:

1776, June 7: Colonel Abram Hite was paid £14 41s ld for carrying lead and other supplies to Yohogania and other counties.[27]

1776, September 24: £13 was paid for the delivery of lead and powder to the Minute Men of Hanover County.[28]

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[22] Pendleton to Long, February 17, 1776. 8 C 87.

[23] A rude blockhouse built by Virginia under the supervision of Colonel Byrd in 1758. It was so named in honor of his friend Colonel Chiswell. It was located between Wytheville and New River. The fort became a tavern and a focal point of religious and social and political activities. Agnes Rothery, *Houses Virginians Have Loved*, 114.

[24] "Virginia Legislative Papers," *The Virginia Magazine of History and Biography*, Vol. XVII, 37.

[25] *American Archives*, Fifth Series, Vol. I, 613.

[26] *Journals of the Continental Congress*, Vol. V, 185.

[27] "Virginia Militia in the Revolution," *The Virginia Magazine of History and Biography*, Vol. IX, 79.

[28] Ibid., 188.

1777, May 22: Southy Simpson was paid £1 12s for the carriage of lead and other items.[29]

1777, June 27: £5 was paid to Jonathan Rogers for carrying lead to West Augusta.[30]

1778, July 10: William Tunstal was paid "72. 16.—for transporting Powder, Lead, Bacon, &c., to Henry Militia against Indians."[31]

On October 10, 1776, Patrick Henry, President of the Council of Virginia at Williamsburg, notified the delegates in Congress that Colonel James Callaway, superintendent of the lead mines, had ten tons ready for delivery "for use of the Continental army."[32] Callaway was ordered to load wagons if they were sent from Philadelphia.[33] The Continental Congress also requested that fifteen or twenty tons more of lead be sent to Philadelphia as soon as possible, but the mining superintendent could not promise more lead until Christmas.

Early in the summer of 1779, the Tories living near the head of Yadkin River (North Carolina) and on New River and Walkers Creek (Montgomery County) organized with the intention of destroying the lead mines on New River, robbing revolutionaries; and afterwards joining Cornwallis. The protection of the mines was then the responsibility of Thomas Quick (or Quirk) whose men consisted of two sergeants and twenty-nine privates, some of whom were not fit for service. Colonel William Preston and other officers of Montgomery[34] tried to quiet the community and protect the citizens. They called for assistance from Washington County. Colonel William Campbell with 150 mounted militia from that county came to the rescue. Together with the Montgomery County militia they dispersed or captured the insurgents after several weeks of active pursuit.

By 1780 the militant Tories, whose numbers had increased to about 100, again made plans to destroy the lead mines in southwestern Virginia. This second scheme was brought to the attention of Thomas Jefferson, then Governor of Virginia, who wrote to Colonel Preston on March 21, 1780, that the Tories, who had begun robbing and killing, should be removed from Virginia and then added: "The lead mines must be protected at all hazards."[35] Also, on July

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[29] *Ibid.*, Vol. XII, 207.
[30] *Ibid.*, Vol. XII, 368.
[31] *Ibid.*, Vol. XV, 92.
[32] *American Archives.* Fifth Series, Vol. II, 986-987.
Mr. Henry stated that the quantity of lead would have been greater had not there been a demand for supplying the Virginia militias who were fighting Indians.
[33] Virginia was obligated to make great remittances to Pennsylvania for goods supplied from thence at a high price. It was therefore reasonable for Virginia to seize every opportunity to enable itself to bear so heavy a burden. *American Archives.* Fifth Series, Vol. II, 91.
[34] Colonel Walter Crockett, Captain Charles Lynch, Captain Robert Sayers, and Captain Isaac Campbell. "The Preston Papers. Relating to Western Virginia," *The Virginia Magazine of History and Biography*, Vol. XXVI, 372.
[35] Louise P. Kellogg, (Editor), "Frontier Retreat on the Upper Ohio, 1779-1791," *Collections of the Wisconsin Historical Society*, Vol. XXIV, 217.

12, 1780, Colonel Preston was warned by Colonel Campbell (then at Fort Chiswell) to protect the lead mines against seizures by the Tories who numbered "about 40 or 50 strong."[36] Militias of Botetourt, Washington, and Montgomery Counties, numbering upwards of 400 men, took over the protective custody of the mines operating within their boundaries.

A memorandum by the Virginia Council concerning western defense during 1780 contains a list of the following amounts[37] of lead transported during that year from the southwestern mines:

May 31	2,000 lbs. for Governor Nash of North Carolina
June 8	1,000 lbs. for the Virginia and North Carolina expedition against Chuckamooga
	3,000 lbs. for Colonel Fleming
	3,000 lbs. for Colonel Crocket
September 8	2,000 lbs. to Fredericksburg
	2,000 lbs. for Governor Nash of North Carolina
October/November	10,000 lbs. for the Northern Army
	2,100 lbs. for General Muhlenburg
	6,000 lbs. for the Continental Laboratory

A slack in Virginia lead production became evident early in 1781. Earnest and persistent attempts to locate another vein of lead were unsuccessful. Thomas Jefferson, anticipating the ever-increasing need for more lead, directed Charles Lynch and his assistant, David Ross, during March "to press the work at the mines . . . that the mines were not a total failure but merely that the principal vein had failed."[38] By March 27, Ross, succeeding to the duties of the Virginia Board of Trade as well as to the Superintendent of the Lead Mines, took steps to purchase straggling parcels of lead in the neighborhood of the mines, and tried to persuade a General Ball to send his Negroes to the mines. Both Ross and Lynch (the latter serving as manager of the lead mines) were urged by Jefferson to employ "a much larger number of hands" as well as another manager who would be agreeable to both men. The intensive search throughout April for other lead deposits was unsuccessful, and General Steuben eventually informed George Washington apologetically that "the Lead Mines have given out."[39] This adversity changed during May when Ross, then at Point

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[36] *Journals of the Continental Congress*, Vol. VII, 247.

[37] Julian P. Boyd, (Editor), *The Papers of Thomas Jefferson*, Vol. III, 422.

[38] Jefferson regretted that the want of ammunition "abridged the intentions" of General Lafayette at Portsmouth. *Ibid*., Vol. V, 199.

[39] George Weedon of Williamsburg reported to Jefferson on April 21 that a Mr. Beal had 7,000 pounds of Lead he offered to lend to the public. Vol. V, *Ibid*, 411.

Fork, happily reported "a very abundant Supply of Lead from the Mines."[40] Ross remarked that 1,000 pounds of it had already been carried in Colonel Innes's wagons to Williamsburg and that the digging of lead at Six, South Quay and at Carter's Ferry would produce from forty to fifty tons of lead in a short time.

In the 1780's Edmund Pendleton (then Speaker of the Virginia House of Delegates) reminded the government that it had authorized an annual rental payment of the Chiswell mines for their war-time use. Although a reasonable sum had been decided upon, the rents had not been paid. Virginia withheld the rents because of a dispute between the Robinson administrators and William Byrd over the title of the mines. Evidently, Pendleton and his co-administrator, Peter Lyons, won their case against Byrd and rented out the mines for £200 per year. Pendleton and Lyons pressed their claims for payments by Virginia, none of which had been paid. The administrators ran into further trouble with Charles Lynch who claimed one-third interest in the mines in a suit pending in the High Court of Chancery. The litigation became even more involved—five different equity suits over the mining company were pending at one time in the Superior Court of Chancery at Richmond. The cases were referred to a commission in 1796, and they were confirmed in 1822.[41]

After the Revolution, the Virginia lead mines continued to produce a fairly large amount of lead; in one year, thirty men produced sixty tons of lead.[42] The quantity, unfortunately, did not meet the needs of Virginia or of the country. Lead was one of the seven important metals which had to be imported regularly from Europe. Nevertheless, the United States prided itself on the Virginia lead production. The Secretary of the Treasury's report to the House of Representatives on January 15, 1790, included the following statement: "A prolific mine of it [lead] has long been open in the south-western parts of Virginia, and under a public administration, during the late war, yielded a considerable supply for military use. This is now in the hands of individuals, who not only carry it on with spirit, but have established manufactories of it at Richmond, ..."[43] General Edward J. Carrington[44] also confirmed the view of "a valuable lead mine in the Southwestern part of the Upper country." He observed that there was a daily production of shot lead some of which was used to cover the roof of the Virginia State House. Other lead, he reported, was frequently brought to a Richmond

[40] *Ibid.*, 600 and 606.

[41] David J. Mays, *Edmund Pendleton*, Vol. I, 204.

[42] Duties on crude or partly manufactured metals were at first regulated so as to encourage reproductive manufactures. An exception to this law was the Virginia lead for it was already mined when the Constitution was adopted and was protected partly for military reasons. Victor S. Clark, *History of Manufactures in the United States, 1607-1860*, Vol. I, 295.

[43] *American State Papers. Legislative and Executive of the United States.* Vol. V, 138.

[44] He had been appointed marshal of the United States District Court of Virginia by George Washington. As marshal he had charge of census returns in 1790 and collected data from his friends and federal officers in the State. "Home Manufactures in Virginia in 1791. Letters to Alexander Hamilton from Gen. Edward Carrington," *William and Mary Quarterly*, Series 2, Vol. II, 141.

manufactory and there converted into shot. Despite these favorable remarks about Virginia lead production, 160,348 pounds of bar and other lead were imported into Virginia between October 1, 1790 and September 30, 1791.[45]

The operations of the various Virginia lead mines came to the attention of Moses Austin, an educated merchant who was born in Durham, Connecticut, in 1765. In 1783 he moved to Philadelphia where he was a partner of the importing house of Stephen Austin & Co. When the business was extended to Richmond, it changed its name to Moses Austin & Co. Moses moved to Richmond during September of 1784 with his wife,Maria Brown, a native of Philadelphia.[46] During 1791 he and his brother, Stephen, purchased the Chiswell mines on New River. The area was renamed Austinville and Moses and his family moved into a farmhouse there.

The Austins used the English patent shot (or the Watt's Globe) method in refining lead ore. (One pound of yellow arsenic was mixed with 80 pounds of pure pig lead in a kettle.) Austin substituted white arsenic which he considered purer. The height of casting was between 40 to 80 feet for the swan shot. In Virginia, however, Austin discovered that there was a material difference in height depending upon the climate and the season of the year. It was reported that Moses Austin "was the first who brought to this country English miners and manufacturers of lead and established the first manufactory of shot and sheet lead in the United States."[47] These products, along with lead pigs and bars, were transported by mules and wagons to Lynchburg and thence to Richmond where there was a shot factory. The accounts of Moses Austin do not show the amount of lead produced or at what cost it was sold. There are, on the other hand, references to expenditures between 1791 and 1794 for moving the various lead products to Barnet, Pope, Walters, Rossinbom, Davis, Foster and Eaton.[48]

The lead mines in southwestern Virginia continued to be productive, for Tench Cox, in his *View of the United States of America* (ca 1794), remarked that the Virginia lead mines yielded "very copiously." He forecasted that there soon would be occasion for manufacturing white lead and all the preparations of lead (ochres of painters' colors).[49]

During 1795 Thomas Ruston of Philadelphia entered into partnership with the Austin brothers. Stephen Austin was eager to dispose of a part of the lead lands at this time. In April of that

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[45] *American State Papers, Commerce and Navigation*, Vol. I, 204.

[46] "Roving Business: Smith, Rochester and Austin," *William and Mary Quarterly*, Series 2, Vol. II, 199-200.

[47] "Letters to Alexander Hamilton from General Edward Carrington: Some Manufactures in Virginia," *William and Mary Quarterly*, Series 2, Vol. II, 199.

[48] Eugene C. Barker, (Editor), *The Austin Papers*, Vol. II, Part 1, 24-25.

[49] There was little need for the establishment of white lead factories in the United States until after the Revolution. Shortly after 1777 Samuel Wetherill & Son of Philadelphia imported and sold white and red lead. William H. Pulsifer, (Compiler), *Notes for a History of Lead*, 215.

year Ruston wrote that Stephen had entered into a business deal with a "Gentleman for a part of the lead Mines, who will bring out two or three Hundred Men, bred to the Mining Business. . . ."[50] Although the prospective sale did not materialize, Stephen was not disheartened but more determined. Meanwhile, in May Ruston notified Moses that a Mr. Judd of New England intended to visit the Virginia lead mines. Moses was urged to show him any civility in his power, but no sale resulted.

By 1796 Moses found the Virginia mines no longer productive.[51] After he heard a favorable account of the lead mines west of the Mississippi River in Upper Louisiana (Missouri), he visited that region in 1797 and obtained a grant from the Spanish government for the valuable mining land. Upon his return to Virginia, the partnership of the Austin brothers with Thomas Ruston was dissolved effective June 15, 1797. Moses also dissolved his land partnership with William Shreve of Frederick County, Maryland. James Austin was appointed superintendent of the Virginia lead mines. With the aid of a Mr. Sanders, the lead furnace was rebuilt and lead production resumed together with its regular and costly transportation to Lynchburg and Richmond.[52]

During 1797 and 1798 Austinville was a thriving community and was reported to have contained a tavern, store, smith shop, shot factory, schoolhouse, potter shop, and hatter shop. The General Post Office established a post office at Austinville either late in 1797 or during the first quarter of 1798 with James Austin appointed as the first postmaster. He continued to serve in that position until the appointment of his successor on May 20, 1802.[53]

By 1801, an inventory of the lead at Austinville was compiled. There remained six tons of lead at old Bensted and at Mines Hill valued at £18. The lead mines were bought for £5,555 (Virginia currency or 18,516 2/18 dollars)[54] in 1805 by Thomas Jackson, a miningsmith the Austins brought down from Philadelphia.

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[50] Eugene C. Barker, (Editor), *The Austin Papers*, Vol. II, Part 1, 24-25.

[51] A manuscript history of the Chiswell mines, owned by the Bertha Mineral Company of Austinville shows that the Austins having failed to pay for the mines, they were forfeited to the State. "Notes and Queries," *The Virginia Magazine of History and Biography*, Vol. XXII, 419.

[52] It was reported that Charles Austin set forth with three or four tons of lead destined for Philadelphia.

[53] *Returns of Deputy Postmasters*, Vol. I, 14-15.

[54] "Notes and Queries," *The Virginia Magazine of History and Biography*, Vol. XXII, 419.